



1

SEQUENCE LISTING

<110> HAMILTON, STEPHEN

<120> ENDOMANNOSIDASES IN THE MODIFICATION OF GLYCOPROTEINS  
IN EUKARYOTES

<130> GFI/109 CIP

<140> 10/695,243

<141> 2003-10-27

<150> 10/371,877

<151> 2003-02-20

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<170> PatentIn Ver. 3.2

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&lt;212&gt; PRT

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Ser	Arg	Asp	Asp	Asn	Gly	Glu	Ala	Thr	Asp	His	Leu	Val	Pro	Thr	Ile	195	200	205	
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&lt;212&gt; PRT

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&lt;400&gt; 23

Met	Lys	Gln	Met	Arg	Ser	Ala	Ser	Ile	Gly	Val	Leu	Ala	Leu	Ser	Trp
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Tyr	Pro	Pro	Asp	Ala	Ser	Asp	Glu	Asn	Gly	Glu	Ala	Thr	Asp	Tyr	Leu
			20					25					30		

Val	Pro	Thr	Ile	Leu	Asp	Lys	Ala	His	Lys	Tyr	Asn	Leu	Lys	Val	Thr
		35					40					45			

Phe	His	Ile	Glu	Pro	Tyr	Ser	Asn	Arg	Asp	Asp	Gln	Asn	Met	His	Gln
	50						55				60				

Asn	Val	Lys	Tyr	Ile	Ile	Asp	Lys	Tyr	Gly	Asn	His	Pro	Ala	Phe	Tyr
65					70					75					80

Arg	Tyr	Lys	Thr	Arg	Met	Gly	His	Ser	Leu	Pro	Met	Phe	Tyr	Ile	Tyr
				85					90					95	

Asp	Ser	Tyr	Ile	Thr	Lys	Pro	Lys	Thr	Trp	Ala	Asn	Leu	Leu	Thr	Pro
			100						105				110		

Ser	Gly	Ser	Gln	Ser	Val	Arg	Gly	Ser	Pro	Tyr	Asp	Gly	Leu	Phe	Ile
		115					120					125			

Ala	Leu	Leu	Val	Glu	Glu	Lys	His	Lys	Tyr	Asp	Ile	Leu	Gln	Ser	Gly
	130					135					140				

Phe	Asp	Gly	Ile	Tyr	Thr	Tyr	Phe	Ala	Thr	Asn	Gly	Phe	Thr	Tyr	Gly
145					150					155					160

Ser	Ser	His	Gln	Asn	Trp	Asn	Lys	Leu	Lys	Ser	Phe	Cys	Glu	Lys	Asn
			165					170						175	

Asn	Met	Ile	Phe	Ile	Pro	Ser	Val	Gly	Pro	Gly	Tyr	Ile	Asp	Thr	Ser
		180						185					190		

Ile	Arg	Pro	Trp	Asn	Thr	Gln	Asn	Thr	Arg	Asn	Arg	Ile	Asn	Gly	Lys
		195				200						205			

Tyr Tyr Glu Val Gly Leu Ser Ala Ala Leu Gln Thr Gln Pro Ser Leu  
 210 215 220

Ile Ser Ile Thr Ser Phe Asn Glu Trp His Glu Gly Thr Gln Ile Glu  
 225 230 235 240

Lys Ala Val Pro Lys Arg Thr Ala Asn Thr Val Tyr Leu Asp Tyr Arg  
 245 250 255

Pro His Lys Pro Ser Leu Tyr Leu Glu Ile Thr Arg Lys Trp Ser Glu  
 260 265 270

Lys Tyr Ser Lys Glu Arg Met Thr Tyr Ala Leu Asp Gln Gln Leu Pro  
 275 280 285

Ala Ser  
 290

<210> 24  
 <211> 290  
 <212> PRT  
 <213> Homo sapiens

<400> 24  
 Met Arg Gln Met Arg Ser Ala Ser Ile Gly Val Leu Ala Leu Ser Trp  
 1 5 10 15

Tyr Pro Pro Asp Val Asn Asp Glu Asn Gly Glu Pro Thr Asp Asn Leu  
 20 25 30

Val Pro Thr Ile Leu Asp Lys Ala His Lys Tyr Asn Leu Lys Val Thr  
 35 40 45

Phe His Ile Glu Pro Tyr Ser Asn Arg Asp Asp Gln Asn Met Tyr Lys  
 50 55 60

Asn Val Lys Tyr Ile Ile Asp Lys Tyr Gly Asn His Pro Ala Phe Tyr  
 65 70 75 80

Arg Tyr Lys Thr Lys Thr Gly Asn Ala Leu Pro Met Phe Tyr Val Tyr  
 85 90 95

Asp Ser Tyr Ile Thr Lys Pro Glu Lys Trp Ala Asn Leu Leu Thr Thr  
 100 105 110

Ser Gly Ser Arg Ser Ile Arg Asn Ser Pro Tyr Asp Gly Leu Phe Ile  
 115 120 125

Ala Leu Leu Val Glu Glu Lys His Lys Tyr Asp Ile Leu Gln Ser Gly  
 130 135 140

Phe Asp Gly Ile Tyr Thr Tyr Phe Ala Thr Asn Gly Phe Thr Tyr Gly  
 145 150 155 160

Ser Ser His Gln Asn Trp Ala Ser Leu Lys Leu Phe Cys Asp Lys Tyr  
                   165                  170                  175  
 Asn Leu Ile Phe Ile Pro Ser Val Gly Pro Gly Tyr Ile Asp Thr Ser  
                   180                  185                  190  
 Ile Arg Pro Trp Asn Thr Gln Asn Thr Arg Asn Arg Ile Asn Gly Lys  
                   195                  200                  205  
 Tyr Tyr Glu Ile Gly Leu Ser Ala Ala Leu Gln Thr Arg Pro Ser Leu  
                   210                  215                  220  
 Ile Ser Ile Thr Ser Phe Asn Glu Trp His Glu Gly Thr Gln Ile Glu  
                   225                  230                  235                  240  
 Lys Ala Val Pro Lys Arg Thr Ser Asn Thr Val Tyr Leu Asp Tyr Arg  
                   245                  250                  255  
 Pro His Lys Pro Gly Leu Tyr Leu Glu Leu Thr Arg Lys Trp Ser Glu  
                   260                  265                  270  
 Lys Tyr Ser Lys Glu Arg Ala Thr Tyr Ala Leu Asp Arg Gln Leu Pro  
                   275                  280                  285  
 Val Ser  
                   290

<210> 25  
 <211> 195  
 <212> PRT  
 <213> Homo sapiens

<400> 25  
 Met Ala Lys Phe Arg Arg Arg Thr Cys Ile Ile Leu Ala Leu Phe Ile  
   1                  5                  10                  15  
 Leu Phe Ile Phe Ser Leu Met Met Gly Leu Lys Met Leu Arg Pro Asn  
                   20                  25                  30  
 Thr Ala Thr Phe Gly Ala Pro Phe Gly Leu Asp Leu Leu Pro Glu Leu  
                   35                  40                  45  
 His Gln Arg Thr Ile His Leu Gly Lys Asn Phe Asp Phe Gln Lys Ser  
                   50                  55                  60  
 Asp Arg Ile Asn Ser Glu Thr Asn Thr Lys Asn Leu Lys Ser Val Glu  
   65                  70                  75                  80  
 Ile Thr Met Lys Pro Ser Lys Ala Ser Glu Leu Asn Leu Asp Glu Leu  
                   85                  90                  95



Pro Pro Leu Asn Asn Tyr Leu His Val Phe Tyr Tyr Ser Trp Tyr Gly  
 100 105 110

Asn Pro Gln Phe Asp Gly Lys Tyr Ile His Trp Asn His Pro Val Leu  
 115 120 125

Glu His Trp Asp Pro Arg Ile Ala Lys Asn Tyr Pro Gln Gly Arg His  
 130 135 140

Asn Pro Pro Asp Asp Ile Gly Ser Ser Phe Tyr Pro Glu Leu Gly Ser  
 145 150 155 160

Tyr Ser Ser Arg Asp Pro Ser Val Ile Glu Thr His Met Arg Gln Met  
 165 170 175

Arg Ser Ala Ser Ile Gly Val Leu Ala Leu Ser Trp Tyr Pro Pro Asp  
 180 185 190

Val Asn Glu  
 195

<210> 26

<211> 451

<212> PRT

<213> Rattus norvegicus

<400> 26

Met Gly Ala Leu Met Ala Thr Tyr Ser Glu Gly Met Met Gly Cys Ser  
 1 5 10 15

Ser Val Gly Arg Cys Phe Ser Ser Thr Leu Ser Pro Ile Ile Thr Leu  
 20 25 30

Val Ala Thr Ser Met Lys Ser Thr Pro Arg Val Leu Glu Asn Lys Ala  
 35 40 45

Asp Phe Gln Arg Ser Asp Arg Ile Asp Met Glu Thr Asn Thr Lys Asp  
 50 55 60

Leu Lys Gly Ala Gly Val Thr Val His Pro Pro Arg Ala Ser Glu Val  
 65 70 75 80

Asn Leu Glu Glu Leu Pro Pro Leu Asn Tyr Phe Val His Ala Phe Tyr  
 85 90 95

Tyr Ser Trp Tyr Gly Asn Pro Gln Phe Asp Gly Lys Tyr Val His Trp  
 100 105 110

Asn His Pro Val Leu Glu His Trp Asp Pro Arg Ile Ala Lys Asn Tyr  
 115 120 125

Pro Gln Gly Arg His Ser Pro Pro Asp Asp Ile Gly Ser Ser Phe Tyr  
 130 135 140

Pro Glu Leu Gly Ser Tyr Ser Ser Arg Asp Pro Ser Val Ile Glu Thr  
 145 150 155 160  
 His Met Lys Gln Met Arg Ser Ala Ser Ile Gly Val Leu Ala Leu Ser  
 165 170 175  
 Trp Tyr Pro Pro Asp Ala Ser Asp Glu Asn Gly Glu Ala Thr Asp Tyr  
 180 185 190  
 Leu Val Pro Thr Ile Leu Asp Lys Ala His Lys Tyr Asn Leu Lys Val  
 195 200 205  
 Thr Phe His Ile Glu Pro Tyr Ser Asn Arg Asp Asp Gln Asn Met His  
 210 215 220  
 Gln Asn Val Lys Tyr Ile Ile Asp Lys Tyr Gly Asn His Pro Ala Phe  
 225 230 235 240  
 Tyr Arg Tyr Lys Thr Arg Met Gly His Ser Leu Pro Met Phe Tyr Ile  
 245 250 255  
 Tyr Asp Ser Tyr Ile Thr Lys Pro Lys Thr Trp Ala Asn Leu Leu Thr  
 260 265 270  
 Pro Ser Gly Ser Gln Ser Val Arg Gly Ser Pro Tyr Asp Gly Leu Phe  
 275 280 285  
 Ile Ala Leu Leu Val Glu Glu Lys His Lys Tyr Asp Ile Leu Gln Ser  
 290 295 300  
 Gly Phe Asp Gly Ile Tyr Thr Tyr Phe Ala Thr Asn Gly Phe Thr Tyr  
 305 310 315 320  
 Gly Ser Ser His Gln Asn Trp Asn Lys Leu Lys Ser Phe Cys Glu Lys  
 325 330 335  
 Asn Asn Met Ile Phe Ile Pro Ser Val Gly Pro Gly Tyr Ile Asp Thr  
 340 345 350  
 Ser Ile Arg Pro Trp Asn Thr Gln Asn Thr Arg Asn Arg Ile Asn Gly  
 355 360 365  
 Lys Tyr Tyr Glu Val Gly Leu Ser Ala Ala Leu Gln Thr Gln Pro Ser  
 370 375 380  
 Leu Ile Ser Ile Thr Ser Phe Asn Glu Trp His Glu Gly Thr Gln Ile  
 385 390 395 400  
 Glu Lys Ala Val Pro Lys Arg Thr Ala Asn Thr Val Tyr Leu Asp Tyr  
 405 410 415  
 Arg Pro His Lys Pro Ser Leu Tyr Leu Glu Ile Thr Arg Lys Trp Ser  
 420 425 430

Glu Lys Tyr Ser Lys Glu Arg Met Thr Tyr Ala Leu Asp Gln Gln Leu  
           435                          440                          445

Pro Ala Ser  
       450

<210> 27  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
       peptide motif

<220>  
 <221> MOD\_RES  
 <222> (4)  
 <223> Lys or Arg

<400> 27  
 Asp Phe Gln Xaa Ser Asp Arg Ile Asn  
       1                              5

<210> 28  
 <211> 4  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
       peptide

<400> 28  
 His Asp Glu Leu  
       1

<210> 29  
 <211> 4  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
       peptide

<400> 29  
 Lys Asp Glu Leu  
       1